

Mt. Scott Creek Dam Removal

Happy Valley, Oregon

Highlight: Mt. Scott Creek

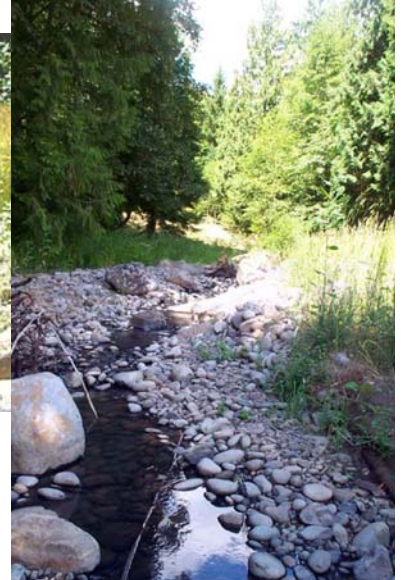
Miles of high-quality fish habitat in the Mt. Scott watershed have been blocked by culverts and dams constructed over the years. In 2002, Clackamas County Water Environment Services received a \$100,000 award from NOAA's Community-based Restoration Program (CRP) to improve fish passage and restore critical habitat in a section of Mt. Scott Creek in Oregon. The creek provides spawning and rearing habitat for steelhead, coho salmon, cutthroat trout, and pacific lamprey. The restoration project on Scott Creek was one of the final components of a watershed-wide undertaking to identify and remove fish passage obstructions.

Water Environment Services (WES) evaluated the feasibility of removing a small dam and accumulated sediments while restoring fish passage and riparian habitat in the headwaters of Mt. Scott Creek, a tributary of Kellogg Creek. The dam was constructed to create a pond for irrigation and fish culture in 1968. It was later used to detain stormwater runoff from a nearby housing development. The dam impeded fish passage while the containment pond contributed to warming of the creek during hot weather and provided substantial sediment contribution.

The dam that created the pond was an earth and rock-filled embankment about 16 feet high and 100 feet wide. The pond was surface drained through a gravity standpipe that exited through a pipe at the base of the dam. An overflow channel drained some water through subsurface flow. It is likely that this overflow channel was in-



Placement of boulders, cobble, gravel, and sand create the stream channel.



tended to pass fish; however, the dam was impassable to upstream migrating salmonids during low to moderate flows. It was also impassable to downstream migrating adults, except possibly during extreme flows when the overflow spillway was full.

The pond had a surface area of $\frac{1}{4}$ acre, and a maximum depth of about 8 feet. During hot weather (roughly June through September), solar heating of the pond surface warmed the discharge water by at least a few degrees; thus warming the water temperature in the creek below the dam.

Fine sediment built up behind the dam was continually being released downstream through the structure's outfall. The dam was in a weakened condition which posed additional concerns, and its failure could have resulted in the entire load of fine sediment being released downstream during a high flow event. If this occurred, downstream spawning beds would have been completely choked with the fine sediment, resulting in long-term water quality problems in the watershed. Removing these fine

GOAL

**Improve fish passage
for steelhead, coho
salmon, cutthroat
trout, pacific lamprey**

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**National Oceanic and
Atmospheric Administration**

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sediments during the dam removal prevented the sediment from being released, and restored riparian habitat in the stream channel.

In 2002, work began to remove the 30-year-old earthen dam and reconstruct a stream channel through the former reservoir area. Removing the dam restored anadromous and resident salmonid fish passage to Mt. Scott Creek above the pond and improved downstream water quality as well. The project reopened 3.2 miles of stream to anadromous fish passage, and reduced water temperatures. Crews dewatered the pond and used soil, rock material, and woody debris to create a new stream channel. They stabilized the channel banks with heavy burlap and covered loose soil with compost. More than 150 volunteers planted 1700 native trees and shrubs on the site during two tree-planting events.

The project is currently in monitoring and maintenance mode. Temperature reduction goals were met almost immediately following the dam removal and are continually monitored with temperature sensors placed up- and downstream of the project site.

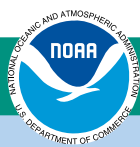
In February, 2002, participants in the tree planting events, including volunteers from the local nonprofit Friends of Trees, learned about the resources of Mt. Scott Creek, and how to protect water quality by making small changes in their daily activities in and around their homes. The site is now being used by Spring Mountain Elementary School as a field laboratory for children to learn about watersheds and water quality.

Fish surveys performed in 2003, indicate that fish use above the former dam is already increasing. In addition to opening 3.2 miles of fish passage for threatened salmon and steelhead, the project created 500 linear feet of stream channel and established a 75-100 foot riparian zone around the channel. A conservation easement

belonging to Clackamas County Service District #1 protects the entire project area.



Juvenile coho, a species that benefits from the dam removal



PROJECT PARTNERS:

- **Clackamas County Water Environmental Services**
- **Clackamas County Service District**
- **Friends of Trees**